

What is claimed is:

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A1
1. A reference reason identifying apparatus,
comprising:
- 5 a referred document extracting device extracting
document information about a referred document from
given document data;
- a reference position extracting device extracting
information about a position where the referred
10 document is cited in the document data;
- an identification device analyzing the
information extracted by the reference position
extracting device and identifying a reason indicating
why the referred document is cited; and
- 15 an output device outputting output information
including the information extracted by the reference
document extracting device and the reason why the
referred document is cited.
- 20 2. The reference reason identifying apparatus
according to claim 1, further comprising
- a document information extracting device
extracting document information about the document
data from the document data,
- 25 wherein

said output device outputs the information extracted by the document information extracting device together with the output information.

- 5 3. The reference reason identifying apparatus according to claim 1, wherein

10 said identification device identifies the reason why the referred document is cited based on at least one of information about a chapter to which the position where the referred document is cited belongs and information about a character string in the neighborhood of the position where the referred document is cited.

- 15 4. A keyword extraction apparatus, comprising:

 a referred document extracting device extracting document information about a referred document from given document data;

20 a reference position extracting device extracting information about a position where the referred document is cited in the document data;

 an identification device analyzing the information extracted by the reference position extracting device and identifying a reason why the
25 referred document is cited;

a keyword extraction device extracting keyword information of the referred document from information in the neighborhood of the position where the reference document is cited; and

5 an output device outputting output information including the information extracted by the referred document extracting device, the reason why the referred document is cited and the keyword information.

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5. An information retrieval apparatus, comprising:

a document database device storing document data;

a reference correlation storage device storing a reference correlation including a reference reason indicating why a referred document is cited by a

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a retrieval device retrieving the document data stored in the document database device using the reference correlation stored in the reference correlation storage device; and

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an output device outputting a retrieval result including the reference reason.

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6. The information retrieval apparatus according to claim 5, further comprising:

a referred document extracting device extracting document information about the referred document from the document data of the specific document;

5 a reference position extracting device extracting information about a position where the referred document is cited in the document data of the specific document;

10 an identification device analyzing the information extracted by the reference position extracting device and identifying the reason why the referred document is cited; and

15 a device storing information including the information extracted by the referred document extracting device and the reference reason in said reference correlation storage device.

7. The information retrieval apparatus according to claim 5, wherein

20 said reference correlation storage device stores keyword information of the referred document extracted from the specific document, and

said retrieval device retrieves the document data using the keyword information.

25 8. The information retrieval apparatus according to

claim 5, wherein

said output device includes a display device graphically displaying the reference correlation based on the reference reason.

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9. The information retrieval apparatus according to claim 5, wherein

said output device includes a display device displaying the reference correlation in a time series.

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10. A document classifying apparatus, comprising:

a referred document extracting device extracting document information about a referred document from given document data;

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a reference position extracting device extracting information about a position where the referred document is cited in the document data;

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an identification device analyzing the information extracted by the reference position extracting device and identifying a reason why the referred document is cited;

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a similarity identification device calculating a similarity in reference correlation including a reason indicating why a referred document is cited, between a plurality of pieces of document data, and

classifying the plurality of the pieces of the document data; and

an output device outputting a classification result.

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11. The document classifying apparatus according claim 10, further comprising

a keyword extraction device extracting keyword information of the referred document from information in the neighborhood of the position where the referred document is cited,

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wherein

said similarity identification device classifies the plurality of the pieces of the document data using the keyword information.

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12. An information retrieval apparatus, comprising:

a database device storing information to be retrieved;

a reference correlation storage device storing a reference correlation including a reason indicating why referred information is cited by a specific piece of information;

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a retrieval device retrieving information stored in the database device using the reference correlation

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stored in the reference correlation storage device;
and

an output device outputting a retrieval result
including the reference reason.

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13. A computer-readable storage medium on which is
recorded a program enabling a computer to execute a
process, said process comprising:

extracting document information about a referred
document from given document data;

extracting information about a position where the
reference document is cited in the document data;

analyzing the information extracted by the
reference position extracting device and identifying
a reason indicating why the referred document is
cited; and

outputting output information including the
information about the referred document and the reason
why the referred document is cited.

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14. A computer-readable storage medium on which is
recorded a program enabling a computer to execute a
process, said process comprising:

retrieving document data stored in a document
database using a reference correlation including a

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reference reason indicating why a referred document is cited by a specific document; and

outputting a retrieval result including the reference reason.

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15. A computer-readable storage medium on which is recorded a program enabling a computer to execute a process, said process comprising:

10 extracting document information about a referred document from given document data;

extracting information about a position where the referred document is cited in the document data;

15 analyzing the information about the position where the referred document is cited and identifying a reason indicating why the referred document is cited;

20 calculating a similarity in reference correlation including a reason why a referred document is cited, between a plurality of pieces of document data, and classifying the plurality of the pieces of the document data; and

outputting a classification result.

25 16. A reference reason identifying apparatus, comprising:

a referred document extracting means for extracting document information about a referred document from given document data;

5 a reference position extracting means for extracting information about a position where the referred document is cited in the document data;

10 an identification means for analyzing the information extracted by the reference position extracting means and identifying a reason indicating why the referred document is cited; and

15 an output means for outputting output information including the information extracted by the reference document extracting means and the reason why the referred document is cited.

17. An information retrieval apparatus, comprising:

a document database means for storing document data;

20 a reference correlation storage means for storing reference correlations including a reference reason indicating why a referred document is cited by a specific document;

25 a retrieval means for retrieving the document data stored in the document database device using the reference correlation stored in the reference

correlation storage device; and

an output means for outputting a retrieval result including the reference reason.

5 18. A document classifying apparatus, comprising:

a referred document extracting means for extracting document information about a referred document from given document data;

10 a reference position extracting means for extracting information about a position where the referred document is cited in the document data;

15 an identification means for analyzing the information extracted by the reference position extracting means and identifying a reason indicating why the referred document is cited;

20 a similarity identification means for calculating a similarity in reference correlation including a reason why a referred document is cited, between a plurality of pieces of document data, and classifying the plurality of the pieces of the document data; and

an output means for outputting a classification result.